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by André Binette, Daniel de Munnik and Émilien Gouin-Bonenfant

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## Abstract

Canada has continued to lose market share in the United States since the Great Recession, beyond what our bilateral competitiveness measures (relative unit labour costs) would suggest. In this context, we have studied 31 non-energy export categories to assess their individual performance against a category-specific foreign activity measure or benchmark, and to identify which export subaggregates will likely be supported by the recent depreciation of the Canadian dollar. Our main findings are: (i) among the 31 subsectors of non-energy exports, about half (in value terms) have either been performing as expected or outperforming their benchmarks; (ii) the remaining subsectors have lagged their benchmarks, mainly owing to longer-term structural declines; (iii) around half of the subsectors appear to be quite sensitive to persistent movements in the exchange rate; and (iv) about half of the non-energy export subaggregates are anticipated to lead the recovery, including those likely to benefit from robust growth in U.S. construction, U.S. investment in machinery and equipment, and/or the recent depreciation of the Canadian dollar.

*JEL classification: F10, F14, F43*

*Bank classification: Balance of payments and components; Exchange rates*

## Résumé

Depuis la Grande Récession, le Canada continue de perdre des parts de marché aux États-Unis dans des proportions qui dépassent ce que donnent à penser nos mesures de la compétitivité bilatérale (soit les coûts unitaires relatifs de main-d'œuvre). Dans ce contexte, nous avons examiné 31 catégories de biens et services non énergétiques exportés par le Canada pour évaluer chacune selon une mesure de référence, c'est-à-dire une mesure de l'activité étrangère qui lui est spécifique, et pour repérer les catégories auxquelles devrait profiter la récente dépréciation du dollar canadien. Voici les principaux résultats de notre étude : 1) parmi les 31 sous-secteurs examinés, environ la moitié (en valeur) ont évolué conformément aux attentes ou ont dépassé le rythme de croissance de leurs mesures de référence respectives; 2) les autres sous-secteurs ont affiché une moins bonne tenue, surtout en raison de diminutions structurelles de long terme; 3) à peu près la moitié des sous-secteurs considérés semblent être très sensibles à des variations persistantes du taux de change; 4) approximativement la moitié des sous-agrégats devraient alimenter la reprise des exportations, en l'occurrence les biens et services susceptibles de bénéficier de la croissance robuste de la construction ou des investissements en machines et matériel aux États-Unis, ou encore de la récente dépréciation du dollar canadien.

*Classification JEL : F10, F14, F43*

*Classification de la Banque : Balance des paiements et composantes; Taux de change*



## Overview and Key Results

Canada has continued to lose market share in the United States since the Great Recession, beyond what our bilateral competitiveness measures (relative unit labour costs) would suggest. Over the past decade, the growth rate of Canadian non-energy exports has fallen below the pace suggested by the Bank's measure of foreign activity.<sup>1,2</sup> In this context, we studied 31 non-energy export categories to assess their individual performance against a category-specific foreign activity measure or benchmark, and to identify which export categories will likely be supported by the recent depreciation of the Canadian dollar. While the Bank's foreign activity measure and U.S. industrial production remain the main benchmarks to evaluate the performance of non-energy exports, we use more specific U.S. benchmarks to evaluate the subaggregates. Using this analysis, together with the projected profile for the components used in the Bank's measure of foreign demand, as well as intelligence gathered from Canadian firms, we also establish which non-energy export series are likely to lead the recovery going forward. This paper presents a list of results around four main findings:<sup>3</sup>

- (i) Among the 31 subsectors of non-energy exports, around 55 per cent (in value terms) have either been performing as expected or outperforming their benchmarks;
- (ii) The remaining subsectors have lagged their benchmarks, mainly owing to longer-term structural declines;
- (iii) Around half of the subsectors appear to be quite sensitive to persistent movements in the exchange rate;
- (iv) About half of the non-energy export subaggregates are anticipated to lead the recovery, including those likely to benefit from robust growth in U.S. construction, U.S. investment in machinery and equipment, and/or the recent depreciation of the Canadian dollar.

### Section 1: Further Loss of Market Share in the United States since the Great Recession<sup>4</sup>

- Despite a stabilization in Canada's relative unit labour costs vis-à-vis the United States, a market-share analysis suggests that Canada's share of U.S. imports of non-energy products has continued to decline since 2009.

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<sup>1</sup> Canadian non-energy exports are divided into 34 major subaggregates in the 2012 System of National Accounts (SNA) produced by Statistics Canada. Thirty-one of these series are considered in our analysis. We exclude transportation services (since it is believed to be largely driven by other export categories) as well as special transaction and other balance-of-payments adjustments (given that they are difficult to fit into this framework).

<sup>2</sup> See Morel (2012) for more information on the Bank's foreign activity measure.

<sup>3</sup> A description of our methodology can be found in Appendix B.

<sup>4</sup> The market-share analysis cited in this section was conducted by Karyne Charbonneau.

- The share of U.S. non-energy imports coming from Canada has fallen by about 6 percentage points since 2000 to 11.4 per cent in 2013, and roughly 30 per cent of this decline has occurred since 2008. This implies that in aggregate we are losing out to other exporters in the U.S. market. As discussed below, the recent weakness in non-energy exports can also be seen in non-U.S. markets.
- This result also adds to the findings by de Munnik, Jacob and Sze (2012) that competitiveness challenges in global non-energy export markets have been a significant drag on Canadian export growth since 2000 and especially in the post-recessionary period.

## Section 2 | Rating the Performance of the 31 Subsectors of Canada's Non-Energy Exports

Ten non-energy export series have either been performing as expected or outperforming

- Around 55 per cent of Canada's non-energy exports (10 export subaggregates) have grown roughly in line with or above their respective U.S. benchmark since 2000 (Table 1, Appendix A). The main series here are motor vehicle assembly (passenger cars and light trucks), commercial services, intermediate metal products, and food and beverage products.
  - In terms of the number of series, this group is represented evenly by commodity and non-commodity products; however, non-commodity products have a slightly higher importance in terms of nominal share (about 60 per cent).
- While these series have performed well since 2000 compared with their respective benchmarks, it appears that only two of them (farm and fishing products and pharmaceuticals) have outperformed their respective benchmarks since the end of 2011. This mainly reflects a sudden decline in 2012Q1 for most of the series (8 out of 10).
- For these 10 export categories, firms often report that they have recently benefited from:
  - (i) higher U.S. activity (e.g., logging, building materials and motor vehicle assembly);
  - (ii) being part of the global supply chain (e.g., aerospace parts); (iii) record production levels (e.g., farm and food products); and (iv) re-entering the U.S. market after dealing with regulatory issues (e.g., pharmaceuticals).
  - While several export industries have been performing well, many firms point to on-going competitiveness challenges in American and foreign markets. These include increased competition from China and other non-U.S. producers, such as Mexico and Korea for vehicle assembly and parts and intermediate metal products, and competition from U.S. producers for food and beverage products.<sup>5</sup>

<sup>5</sup> The U.S. Free Trade Agreement with South Korea came into force on 15 March 2012. This could have affected our exports to that country. Overall, Canadian exports to South Korea are down by more than \$1.6 billion (in nominal terms) since 2011 on lower shipments of a wide range of products (including coal, chemical pulp and meat products).

Twenty-one non-energy export subaggregates have underperformed their respective benchmarks since 2000

- The aggregate loss in market share seems to be concentrated in 21 export subaggregates, representing more than 40 per cent of non-energy exports.
- About three-quarters of the 21 export subcategories have been significantly below their respective benchmarks over the past decade. For example, furniture and fixtures, as well as clothing and textiles, have been falling steadily since the early 2000s and have failed to post meaningful recoveries since the Great Recession.
  - In addition to the appreciation of the Canadian dollar between 2002 and 2007, firms report that other long-term structural factors are also at play: (i) long-term intense competition from globalization (e.g., clothing, textiles and furniture), sometimes linked to China's accession to the World Trade Organization and the signing of the multilateral agreement on textiles that gradually eliminated tariffs by the mid-2000s,<sup>6</sup> (ii) technological change (e.g., paper, pulp and publishing), (iii) recent weakness in demand due to new competitors (e.g., China, Korea and Mexico), and (iv) weak industry demand.
- Other underperforming non-energy export subaggregates have fallen back more recently after they began to recover following the last recession (as opposed to showing a longer-term structural decline). For example, computers and computer peripheral equipment, which have increased strongly since 2000, have recently seen exports decline by about 15 per cent. Similar behaviour has been observed for metal ores and concentrates. In addition, many non-energy commodity exports have lagged recently, such as non-metallic minerals and chemicals.
  - For some non-energy export subaggregates, the recent weakness is likely to be cyclical and could have arisen from weak demand in non-U.S. destinations.<sup>7</sup> While our analysis has relied on U.S. benchmarks, the weakness in non-energy goods exports since 2011Q4 appears to reflect a decline in shipments to non-U.S. destinations. In nominal terms, non-energy goods exports to the United States increased by 4.5 per cent between 2011Q4 and 2013Q4, while shipments to non-U.S. destinations fell by about 12 per cent. Exports to non-U.S. regions have all contributed to the decline, but shipments to the United Kingdom have contributed disproportionately.

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<sup>6</sup> See Wyman (2005) for more on the impact of this agreement.

<sup>7</sup> This dynamic can be observed in various purchasing managers' indexes over this period.



### Section 3 | Exchange Rate Sensitivity and Future Prospects for Canadian Exports

Table 1 reports the subaggregates that are exchange-rate sensitive and that are likely to lead the recovery (i.e., demonstrate above-average growth), as well as the sectors that will likely lag.

Seventeen non-energy export subaggregates will likely benefit from the recent depreciation of the Canadian dollar

- About half of the 31 subaggregates appear to be highly sensitive to persistent movements in the Canadian dollar. Most of these are consumer products and investment goods.<sup>8</sup> The transportation sector also appears to be highly sensitive to exchange rate movements, with four of its main subsectors making the list (other transportation equipment and parts, medium and heavy trucks, motor vehicle parts, and aircraft). Only passenger cars and light trucks in the transportation industry seem insensitive to changes in the dollar. Lastly, we find that 75 per cent of the sensitive sectors have been underperforming over the past decade. The majority of the export categories that have performed in line with or above their benchmarks tend to be less sensitive to persistent movements in the Canadian dollar and are less likely to benefit from the recent depreciation.

About half of the non-energy export subaggregates are likely to lead the recovery

- Overall, we expect that about half of the non-energy export subaggregates are likely to lead the recovery (with above-average growth), including those linked to U.S. construction activity (such as logging and building materials) and U.S. investment in machinery and equipment (such as industrial, electronic and electrical machinery and equipment, computers, and aircraft). The contribution of other sectors that have performed well over the past decade relative to foreign activity, such as commercial services and pharmaceutical products, should continue.
- We note that some exchange-rate-sensitive product categories will likely disappoint, despite the depreciation. These categories have seen a long-term structural decline due to either intense global competition (including footwear, textiles, clothing, motor vehicle parts, furniture and fixtures) and/or industry-specific change (e.g., expenditures by the mining sector on non-aerospace transportation equipment).
- Three categories (motor vehicle assembly, food, beverage and tobacco products, and farm and fishing) that outperformed over the past decade are not likely to be key drivers of growth. For motor vehicle assembly, recent plant closures and intense competition will likely limit growth going forward. Farm and fishing products have seen strong growth that is not likely to be repeated going forward, owing to recent record farm yields.

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<sup>8</sup> Preliminary results from simple regression analysis seem to support the results presented here.



## References

de Munnik, D., J. Jacob and W. Sze. 2012. "The Evolution of Canada's Global Export Market Share." Bank of Canada Working Paper No. 2012-31.

Morel, L. 2012. "A Foreign Activity Measure for Predicting Canadian Exports." Bank of Canada Discussion Paper No. 2012-1.

Wyman, D. 2005. "Stretching or Shrinking? The Textile and Clothing Industries in Canada." Statistics Canada Analytical Paper. Catalogue No. 11-621-MIE – No. 022.

**Table 1: Classification of non-energy export components: Past performance and future prospects**

Components that have ...	Non-Energy Export Components	U.S. Benchmark <sup>1</sup>	Nominal Share (2013) <sup>2</sup>	Exchange-Rate Sensitive <sup>3</sup>	Likely to Lead the Recovery <sup>4</sup>
... grown in line with or above their respective U.S. benchmarks	Commercial services	Gross domestic product	12.4		✓
	Passenger cars and light trucks	Motor vehicle sales	10.9		
	Intermediate metal products	Industrial production	10.1		✓
	Food, beverage and tobacco products	Consumption—goods	5.4		
	Farm and fishing products	Industrial products—food, beverages, and tobacco	5.2		
	Building and packaging materials	Housing investment	4.8	✓	✓
	Aircraft, aircraft engines and aircraft parts	Business investment—aerospace and other miscellaneous goods	3.5	✓	✓
	Plastic and rubber products	Industrial production	3.1	✓	✓
	Pharmaceutical and medicinal products	Personal consumption—health care	1.5	✓	✓
	Logs, pulpwood and other forestry products	Housing investment	0.2		✓
... under-performed compared with their respective U.S. benchmarks	Industrial machinery, equipment and parts	Business investment—M&E	6.3	✓	✓
	Basic/industrial chemical products	Industrial production	5.1		
	Tires, motor vehicle engines and parts	Industrial production—motor vehicles	4.5	✓	
	Travel services	Personal consumption—food services and accommodation	4.2		✓
	Other electronic and electrical machinery, equipment and parts	Business investment—other information processing equipment	3.5	✓	✓
	Pulp and paper stock	Industrial production	2.9		
	Cleaning products, appliances, and misc. goods	Consumption—goods	2.4	✓	
	Metal ores and concentrates	Industrial production	2.2		
	Non-metallic minerals	Industrial production	2.0		
	Food and tobacco intermediate products	Industrial production - food, beverages and tobacco	1.4		
	Communications and audio and video equipment	Business investment—other information processing equipment	1.3	✓	✓
	Recyclable waste and scrap	Industrial production	1.2		
	Furniture and fixtures	Personal consumption—furnishings and durable equipment	1.0	✓	
	Clothing, footwear and textile products	Personal consumption—clothing and shoes	1.0	✓	
	Fabricated metal products	Industrial production	0.9	✓	✓
	Paper and published products	Consumption—goods	0.9	✓	
	Med. and heavy trucks, buses and other MV	Bus. investment—transport equip.	0.6	✓	
	Other transportation equip. and parts	Bus. investment—transport equip.	0.6	✓	
	Computers and computer peripheral equip.	Business investment—computers and peripheral	0.5		✓
	Non-metallic mineral products	Industrial production	0.4	✓	✓
	General government services	Gross domestic product	0.3	✓	✓

1. We currently exploit only U.S. benchmarks. With about 25 per cent of our products shipped to non-U.S. destinations (2013), our benchmarks could be improved in the future. For two export categories (government and commercial services), we have elected to use U.S. GDP.

2. Nominal shares are of the 31 subcategories considered here.

3. If, during a period of depreciation (appreciation), the growth of a component surpasses (lags) the growth of the benchmark, we define this series to be responsive to exchange rate movements. Using this definition, if a component is responsive for at least 3 out of 4 cycles, then it is defined as sensitive to the exchange rate. The last four major exchange rate cycles are 1983-86, 1986-91, 1992-95, and 2002-07.

4. We consider each export category's recent performance, its link to the expected drivers of foreign demand (such as U.S. residential and business investment), intelligence from industry contacts, and historical sensitivity to the exchange rate to determine which export components are likely to lead the recovery.

## Appendix A | Rating Performance (2000Q1=100)

Nominal share of the 31 non-energy export categories are in parentheses

Components that have grown in line with or outperformed their respective U.S. benchmarks

Chart 1: Commercial services (12.4)

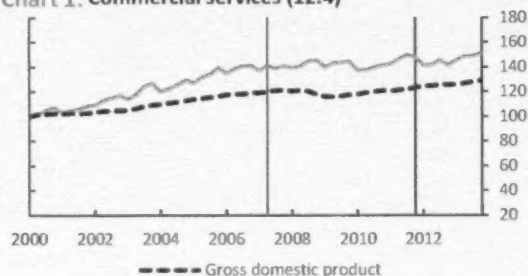


Chart 2: Passenger cars and light trucks (10.9)



Chart 3: Intermediate metal products (10.1)

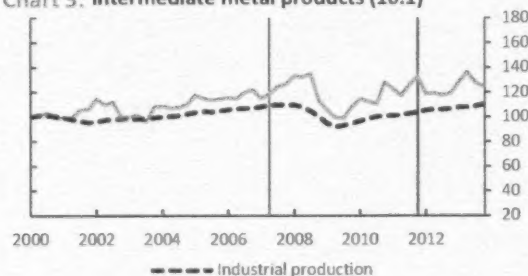


Chart 4: Food, beverage and tobacco products (5.4)

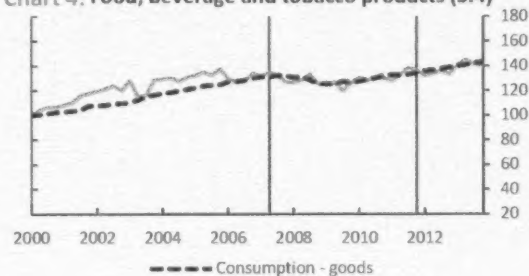


Chart 5: Farm and fishing products (5.2)



Chart 6: Building and packaging materials (4.8)



Chart 7: Aircraft, aircraft engines and aircraft parts (3.5)

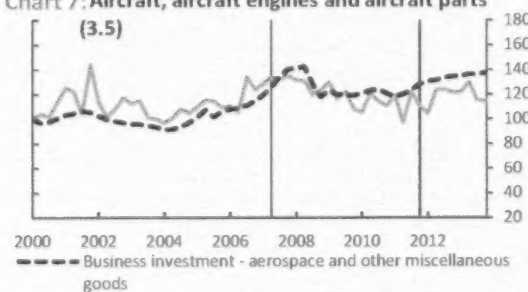


Chart 8: Plastic and rubber products (3.1)

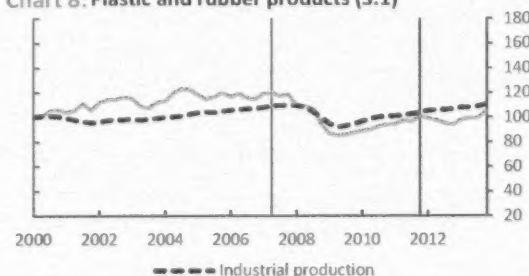


Chart 9: Pharmaceutical and medicinal products (1.5)

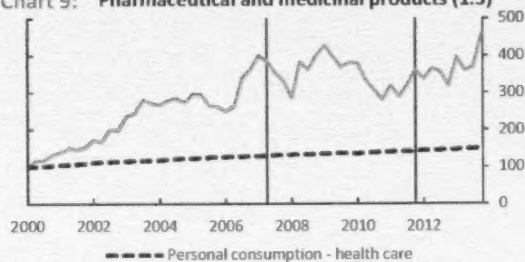
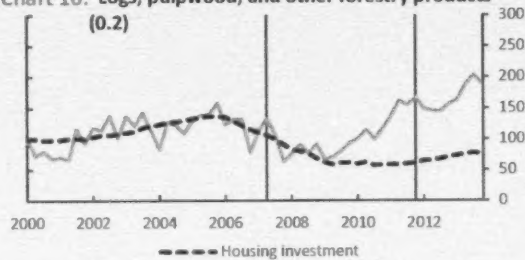


Chart 10: Logs, pulpwood, and other forestry products (0.2)



### Components that have underperformed compared with their respective U.S. benchmarks

Chart 11: Industrial machinery, equipment and parts (6.3)

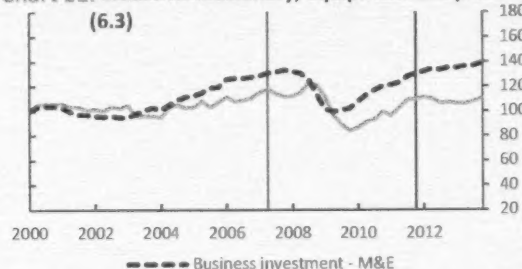


Chart 12: Basic chemicals and industrial chemical products (5)

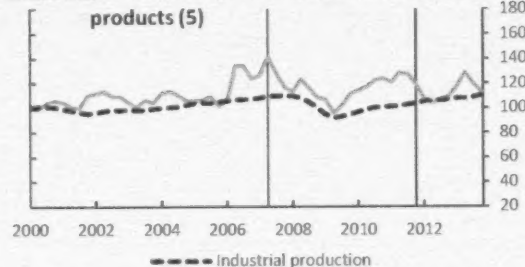


Chart 13: Tires; motor vehicle engines and motor vehicle parts (4.5)

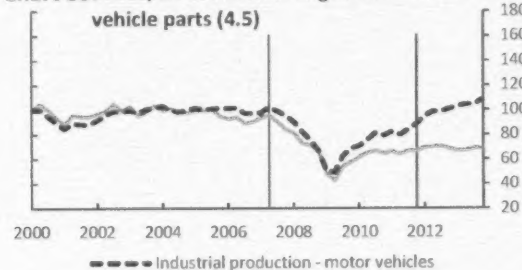


Chart 14: Travel services (4.2)

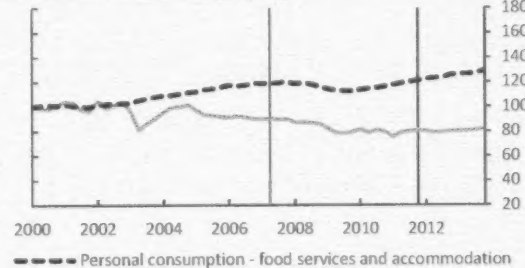


Chart 15: Other electronic and electrical machinery, equipment and parts (3.5)

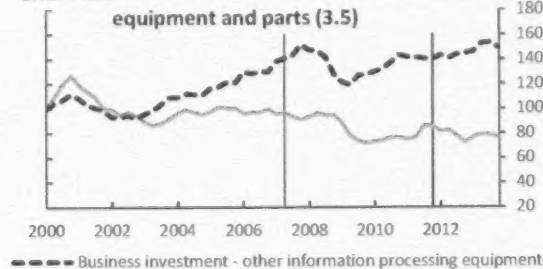
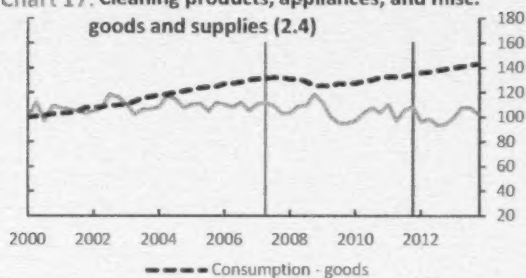


Chart 16: Pulp and paper stock (2.9)

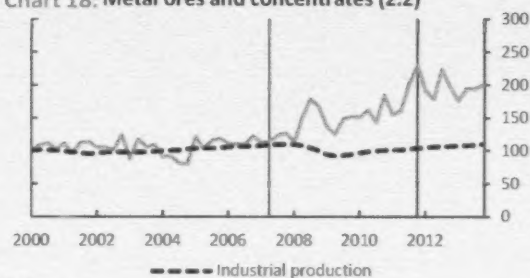




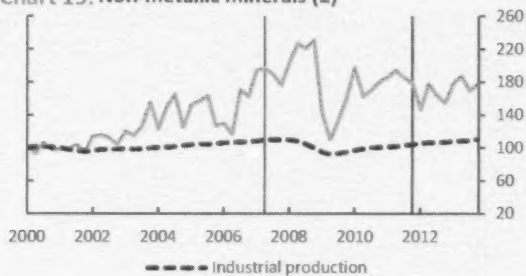
**Chart 17: Cleaning products, appliances, and misc. goods and supplies (2.4)**



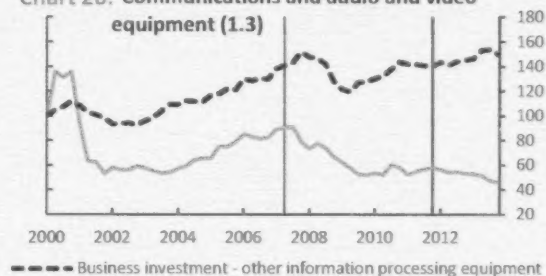
**Chart 18: Metal ores and concentrates (2.2)**



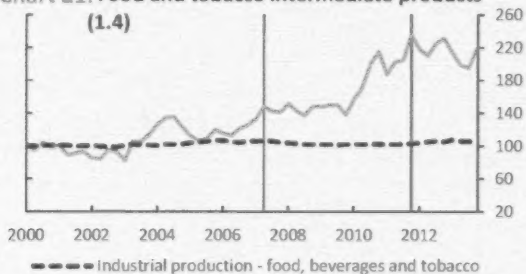
**Chart 19: Non-metallic minerals (2)**



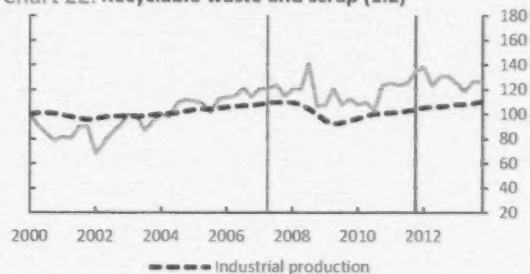
**Chart 20: Communications and audio and video equipment (1.3)**



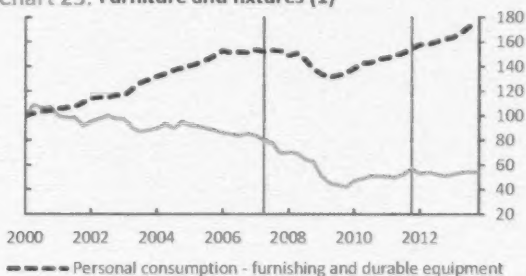
**Chart 21: Food and tobacco intermediate products (1.4)**



**Chart 22: Recyclable waste and scrap (1.2)**



**Chart 23: Furniture and fixtures (1)**



**Chart 24: Clothing, footwear and textile products (1)**

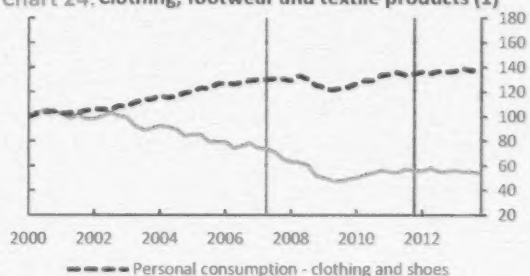


Chart 25: Fabricated metal products (0.9)



Chart 26: Paper and published products (0.9)

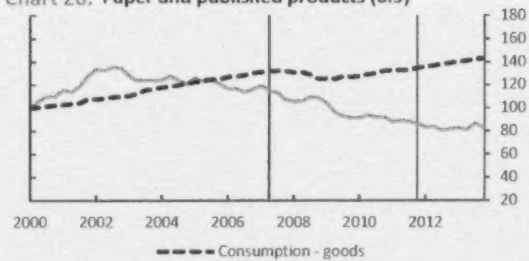


Chart 27: Medium and heavy trucks, buses and other motor vehicles (0.6)

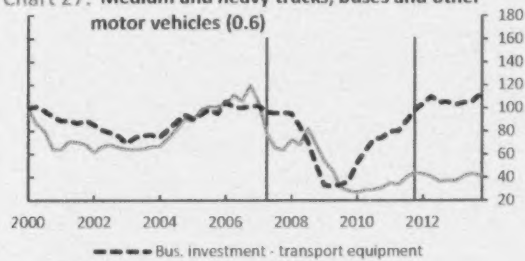


Chart 28: Other transportation equipment and parts (0.6)

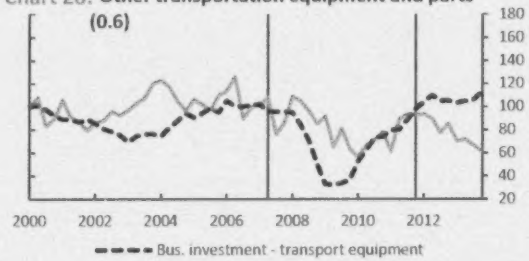


Chart 29: Computers and computer peripheral equipment (0.5)

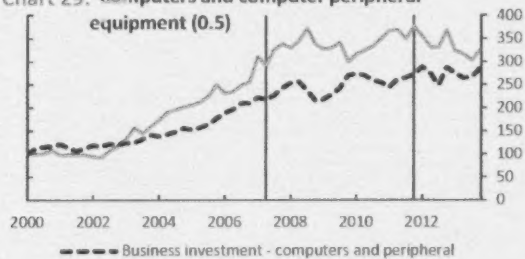


Chart 30: Non-metallic mineral products (0.4)

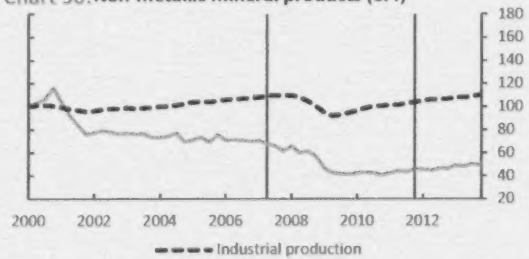
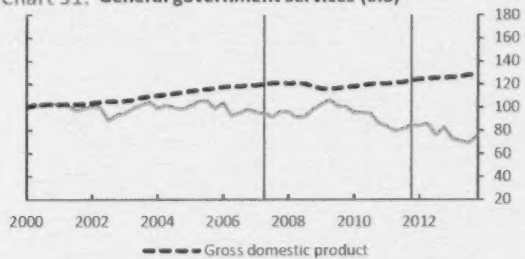


Chart 31: General government services (0.3)



## Appendix B | Methodology

### Rating Past Performance

While the Bank's foreign activity measure and U.S. industrial production remain the main benchmarks to evaluate the performance of non-energy exports, we use more specific U.S. benchmarks to evaluate the subaggregates. U.S. benchmarks were chosen to categorize the growth performance of each series into two groups: (i) those that have been in line or have outperformed, and (ii) those that have underperformed relative to their benchmarks. These benchmarks have been chosen to match as closely as possible the definition of each export series. For example, the export of computers and computer peripheral equipment is linked to U.S. business investment in computers and computer peripheral equipment.<sup>9</sup> The classification of the performance of each series is based on the percentage change since 2000 for each component, compared with its benchmark but also on a careful examination of the individual series' more recent performance (Appendix A). Here, we avoid using a strict rule to prevent mistaking volatility for underlying weakness or strength.

### The Recent Depreciation of the Canadian Dollar: Who Will Likely Benefit?

We use four episodes of major movements in the exchange rate to investigate which non-energy export series have been the most sensitive to the exchange rate.<sup>10</sup> To do this, we identify which series have underperformed (outperformed) during periods of appreciation (depreciation) in each episode by calculating the cumulative percentage deviation from their respective benchmarks. If, during a period of depreciation (appreciation), the growth of a component surpasses (lags) the growth of the benchmark, we define this series to be responsive to exchange rate movements. Using this definition, if a component is responsive for at least 3 out of 4 episodes, then it is defined as sensitive to exchange rate movements.<sup>11</sup>

### Which Components Will Likely Lead the Recovery?

In addition to those non-energy export components that are likely to benefit from the exchange rate, we considered each export category's relative performance (both prior to and following the Great Recession with respect to its benchmark), its link to the expected drivers of foreign demand (such as U.S. residential and business investment) and intelligence from Canadian firms regarding the outlook for their firm and sector.

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<sup>9</sup> If no subaggregates could be easily identified, we used our foreign activity measure for non-commodity exports or U.S. industrial production for non-energy commodity exports. For two export categories (government and commercial services), we have elected to use U.S. GDP.

<sup>10</sup> The last four major exchange rate cycles examined here are 1983–86, 1986–91, 1992–95, and 2002–07.

<sup>11</sup> This is a simplified approach. This methodology could be improved in several ways, for example, by considering the full set of possible factors. In addition, applying these findings to the current depreciation ignores the possible structural adjustment that may have taken place within each industry.